

## CURRICULUM VITAE

**MARÍA ISABEL BAEZA RAMÍREZ, Ph. D.**

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### WORK ADDRESS:

National Polytechnic Institute  
National School of Biological Sciences  
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### EDUCATION

**Doctor of Philosophy, Biochemistry**, National Polytechnic Institute, México City 06401, México.

**Bachelor of Science, Chemist Bacteriologist and Parasitologist**, National Polytechnic Institute, México City 06401, México.

### ACADEMIC/TEACHING EXPERIENCE

**Chairman**, National Polytechnic Institute, Biomembranes Laboratory, Biochemistry Department, México City 06401, México, January 1985 - Present.

- ♦ Teach undergraduate and graduate students.
- ♦ Supervise and guide master's and doctoral students' thesis work.
- ♦ Conduct and lead laboratory meetings.
- ♦ Participate in hiring professionals.

**Director**, National Polytechnic Institute, Ph. D. and S. M. Program in Molecular Biomedicine and Biotechnology, México City 06401, México, January 2001 - Present.

**Full Professor**, National Polytechnic Institute, Biochemistry Department, México City 06401, México, January 1975 - Present.

**Associate Professor**, National Polytechnic Institute, Biochemistry Department, México City 06401, México, January 1968 - 1975.

**Visiting Professor**, University of Cincinnati, Obstetric and Gynecology Department, Ohio 45267, USA. August 1997, September 1998.

### **COURSES TAUGHT**

#### **Undergraduate**

- ◆ General Biochemistry

#### **Graduate**

- ◆ Advanced Biochemistry
- ◆ Molecular Biology
- ◆ Biomembranes
- ◆ Cell Dynamic
- ◆ Laboratory of Advanced Biochemistry
- ◆ Human Biochemistry
- ◆ Cell Physiology

### **RESEARCH EXPERIENCE**

**Director. Molecular Basis of the Antiphospholipid Syndrome**, National Polytechnic Institute, Biochemistry Department, México City 06401, México, January 1990 - Present.

**Director. Gen Therapy Using Lipofection**, National Polytechnic Institute, Biochemistry Department, México City 06401, México, January 1985 - Present.

**Associate Researcher. Gen Therapy Using Virus-like Particles** National Polytechnic Institute, Biochemistry Department, México City 06401, México, January 1968 - 1985.

### **THESIS WORK SUPERVISE**

**Supervise and guide** of 30 Bachelors Thesis Works. National Polytechnic Institute, México City 06401, México, 1976 - 2003.

**Supervise and guide** of 12 Masters Thesis Works. National Polytechnic Institute, México City 06401, México, 1994 - 2003.

**Supervise and guide** of 5 Doctoral Thesis Works. National Polytechnic Institute, México City 06401, México, 1990 - 2003.

### **ACADEMIC HONORS AND AWARDS**

**Member** of the Researchers National System. National Council of Science and Technology, México City, México. July 1988 - Present.

**Medical Research Award**. National Polytechnic Institute, México City 06401, México, 2000.

**Von Behring Kitasato Award**. Mexican National Academy of Medicine, México City. México, 1999.

## TEACHING AND RESEARCH FELLOWSHIPS

Teaching Fellowship, National Polytechnic Institute, México City 06401, México, 1990 - 1999.

Research Fellowship, National Polytechnic Institute, México City 06401, México, 2000 - Present.

## RECENT MEETINGS PRESENTATIONS

Campos, B., Eis, A., Aguilar, L., Baeza, I. & Myatt, L. Expresión of lipidic particles in trophoblast of normal, preclampsic and diabetic placentae. 14<sup>th</sup> Rochester Trophoblast Conference. 6<sup>th</sup> Meeting of The International Federation of Placenta Associations, and The Society for the Investigation of Early Pregnancy. New York USA. pp A.9 (October 3-8, 2000).

Campos, B., Chames, M., Carpenter, L., Cornelius, J., Aguilar, L., Sibai, B., Barton, J., Myatt, L. & Baeza, I. Detection of antiphospholipid antibodies against lipidic particles in the serum of patients with hypertensive disorders of pregnancy. 48<sup>th</sup> Annual meeting of The Society for Gynecologic Investigation. Supplement to: J. Soc. Gynecol. Invest. Chicago, Ill. USA. pp. 218A (March 14-17, 2001).

Chames, M., Barton, J., Hnat, M., Schwemberger, S., Khoury, J., Baeza, I. & Campos, B. Antigenic lipid structures are increased in the serum of patients with preclampsia. 22<sup>nd</sup> Annual Meeting of the Society for Maternal-Fetal Medicine. Supplement to: Amer. J. Obstet. Gynecol. New Orleans, Louisiana, USA. pp. S173 (January 14-19, 2002).

Campos, B. & Baeza, I. Antiphospholipid syndrome: a mouse model for thrombosis. Research Symposium. American Heart Association. Fighting Heart Disease and Stroke. Dallas, Tx. USA. pp. 10 (May 18, 2002).

Campos, B., Lantry, J. M., Bill, J. P., Chames, M., Barton, J., Schwemberger, S. & Baeza, I. Antiphospholipid antibodies against lipidic particles as markers for hypertensive disorders of pregnancy. Gynecologic Investigation 50<sup>th</sup> Annual Scientific Meeting. (March 28, 2003).

## REFEREED PUBLICATIONS

Carvajal, G., Baeza, I. and Carvajal, J. E. (1973) Preparation of virus like particles of DNA-IgG. *Experientia* 29: 1299 -1301.

Baeza, I., Carvajal, J. E. and Carvajal, G. (1974) Virus like particles of DNA-IgG designed to be used in Genetic Engineering. *Rev. Lat-amer. Microbiol.* 16:147-151.

Carvajal, G. Baeza, I. and Carvajal, J. E. (1974) Human gene therapy and its perspectives. In: *The Profiles of Biochemistry in México.* J. Mora, S. Estrada-O. and J. Martuscelli., Eds. Autonomous National University from México, México. pp. 25-46.

Carvajal, G., Baeza, I. and Carvajal, J. E. (1975) Genetic Engineering and the possibility of the treatment of hereditary diseases. Science and Development (CONACYT) 1: 1-9.

Baeza, I. (1975) Studies on gene therapy of the diabetes mellitus in mice with hereditary diabetes. Doctoral Thesis. México, D. F.

Baeza, I., Rodríguez, C. M. and Carvajal, G. (1978) Preparation of DNA-IgG conjugates, II. Properties and composition. Bol. Inst. Estud. Med. Biol. Autonomous National University from México, México. 30: 19-26.

Baeza, I., Abrego, R. A., Avilés, P. N. and Wong, C. (1980) Effect of polyamines on the formation of DNA-Immunoglobulin G complexes. Rev. Lat-amer. Microb. 22: 213-219.

Baeza, I. (1981) Diversity of membrane structure in *Haemophilus influenzae*. In: The *Haemophilus* genus and its biological importance. Ed. by Autonomous Metropolitan University, Xochimilco Unit, México. pp. 11-13.

Baeza, I. (1983) Interaction of DNA with polyamines. In: Biological role of polyamines. Bulletin of Biochemical Education. México, Vol. II: 26.

Baeza, I., Marroquín, G. E., Wong, C. and Escobar-Gutiérrez, A. (1984) Binding of antibodies to liposomes through the "A" protein of *Staphylococcus aureus*. Rev. Lat-amer. Microbiol. 26: 197-202.

Marroquín, G. E., Wong, C., Escobar-Gutiérrez, A., and Baeza, I. (1985) The ELISA method for the determination of protein bound to liposomes. Rev. Lat-amer. Microbiol. 27: 163-168.

Baeza, I. (1985) Condensation of deoxyribonucleic acid by polyamines. Rev. Lat-amer. Microbiol. 27: 259-265.

Baeza, I. and Wong, C. (1985) *In vitro* and *in vivo* condensation of deoxyribonucleic acid. Bulletin of Biochemical Education. México, Vol. IV, 86-93.

Uhthoff, B. E., Rodríguez-Páez, L., Baeza, I. and Wong, C. (1985) Effect of N-(3-carboxy-4-hidroxi-phenyl)maleimide on the LDH isozymes of mice. Medical Acta, México, 21: 37-45.

Baeza, I., Ibáñez, M., Santiago, J. C., Wong, C., Lazcano, A. and Oró, J. (1986) Studies on precellular evolution: The encapsulation of polyribonucleotides by liposomes. Advances in Space Research. 11: 39-43.

Neri-Cortés, D., Baeza, I., and Wong, C. (1986) Design, synthesis and study of inhibitors of lactic dehydrogenase. Medical Acta, México, 22: 9-14.

Baeza, I., Gariglio, P., Rangel, L. M., Chávez, P., Cervantes, L., Argüello, C., Wong, C. and Montañez, C. (1987) Electron microscopy and biochemical properties of polyamine-compacted DNA. Biochemistry, 26: 6387-6392.

Baeza, I., Ibáñez, M., Lazcano, A., Santiago, J. C., Argüello, C., Wong, C. and Oró, J. (1987) Liposomes with polyribonucleotides as model of precellular systems. Origins of Life, 17: 321-331.

Rodríguez-Páez, L., Baeza, I., Yáñez, R. and Wong, C. (1987) Inhibitors of the polyamine biosynthesis. Acta Médica, México, 23: 7-17.

Baeza, I., Giono, S., Santiago, J. C., Martínez, F., Aquino, C. and Wong, C. (1987) Membranal protein profiles of different species of *Haemophilus*. Rev. Lat-amer. Microbiol. 29: 157-163.

Baeza, I., Montañez, C., Santiago, J. C., Delgado, P., Ibáñez, M. and Wong, C. (1988) Spermidine-condensed DNA is resistant to the pancreatic DNase I activity. Rev. Lat-amer. Microbiol. 30: 289-295.

Baeza, I., Wong, C., Ibáñez, M., Santiago, J. C. and Escobar-Gutierrez, A. (1989) Liposomes-surface anchoring of IgG through protein A and its determination by ELISA. Rev. Lat-amer. Microbiol. 31: 221-226.

Baeza, I., Ibáñez, M., Santiago, J. C., Wong, C. and Oró, J. (1990) Diffusion of  $Mn^{2+}$  ions into liposomes mediated by phosphatidate and monitored by the activation of an encapsulated enzymatic system. J. Mol. Evol. 31: 453-461.

Wong, C., Santiago, J. C., Rodríguez-Páez, L., Ibáñez, M., Baeza, I. and Oró, J. (1991) Synthesis of putrescine under possible prebiotic earth conditions. Origins of Life, 21: 145-156.

Ibáñez, M., Gariglio, P., Rangel, L. M., Chávez, P., Wong, C. and Baeza, I. (1991) The liposome technology in the gene transference in eucaryotes. An. Esc. nac. Cienc. biol., México, 36: 123-138.

Noguera, T. B., Baeza, I. and Wong, C. (1991) Perspectives in the chemotherapy of Chagas disease. Medical Acta, México, 27: 37-56.

Rodríguez-Páez, L., Baeza, I. and Wong, C. (1991) Ornithine decarboxylase inhibitors as potential chemotherapeutic agents. An. Esc. nac. Cienc. biol., México, 36: 151-166.

Baeza, I., Ibáñez, M., Wong, C., Chávez, P., Gariglio, P. and Oró, J. (1992) Possible prebiotic significance of polyamines in the condensation, protection, encapsulation and biological properties of DNA. Origins of Life, 21: 225-242.

Baeza, I., Sepúlveda, J. and Wong, C. (1992) Changes in the hydrophobic properties of the cell envelopes of *Hemophilus influenzae* in relationship with the genetic transformation. Rev. Lat-amer. Microbiol. 34: 205-213.

Rodríguez-Páez, L., Neri-Cortés, D., Baeza, I. and Wong, C. (1992) Anticonvulsive effect of some derivatives of the gamma hydrazide of the L-glutamic acid. Medical Acta, México, XXVIII:41-49.

Rodríguez-Páez, L., Neri-Cortés, D., Baeza, I. & Wong, C. (1993) Effect of the L-amino acid oxidase from snakes' venom on the gamma hydrazide of L-glutamic acid and characterization of the reaction products. An. Esc. nac. Cienc. biol. México, 38: 167-178.

Baeza, I., Wong, C., Ibáñez, M., Mondragón, R., González, S., Farfán, N. and Argüello, C. (1994) Transbilayer diffusion of divalent cations mediated by phosphatidate particles. J. Mol. Evol. 39: 560-568.

Baeza, I., Aguilar, L., Alvarado-Alemán, F., Soto, C., Escobar-Gutiérrez, A., Mondragón, R., González, S., Ibáñez, M., and Wong, C. (1995) Identification of phosphatidate nonlamellar phases on liposomes by flow cytometry. Biochem. Cell Biol. 73: 289-297.

Baeza, I., Ibáñez, M., Aguilar, L., and Wong, C. (1996) Kinetic properties of the enzyme DNase I encapsulated into liposomes. A bioseparations approach. In: *Frontiers in Biotechnology and Bioengineering*. Ed. by Galindo, E. México, D.F. pp. 263-270.

Ibáñez, M., Gariglio, P., Chávez, P., Santiago, R., Wong, C. and Baeza, I. (1996) Spermidine-condensed DNA and cone-shaped lipids improve delivery and expression of exogenous DNA transfer by liposomes. *Biochem. Cell Biol.* 74: 633-643.

Baeza, I., Aguilar, L., Ibáñez, M. and Wong, C. (1997). Electron microscopy and biological properties of pBR322 DNA condensed with the trivalent cations spermidine and hexammine cobalt III. *Rev. Lat-amer. Microbiol.* 39:46-56.

Wong, C., Rodríguez-Páez, L., Noguera, B., Pérez, A. and Baeza, I. (1997) Selective inhibition of the sperm-specific lactate dehydrogenase isozyme-C4 by N-isopropyl oxamate. *Biochim. Biophys. Acta*, 1343 :16-22.

Rodríguez-Páez, L., Neri, C. D., Baeza, I. and Wong, C. (1997) Effect of  $\delta$ -N-formyl ornithine and  $\epsilon$ -N-formyl lysine on the activity of ornithine decarboxylase, the key enzyme in the polyamine biosynthesis. *An. Esc. nac. Cienc. biol., México*, 42:1-9.

Rodríguez-Páez, L., Neri-Cortés, D., Baeza, I. and Wong, C. (1997) On the study of N-formyl and N-iodoacetyl derivatives of L-ornithine and L-lysine as possible inhibitors of the arginase. *An. Esc. nac. Cienc. biol., México*, 42:10-18.

Baeza, I., Aguilar, L., Ibáñez, M., and Wong, C. (1998) Estructural and functional role of lipids in biological membranes. *Biochemist Message*. Faculty of Medicine. Autonomous National University from México. Vol. XXII: 51-78.

Rodríguez-Páez, L., Neri-Cortés, D., Baeza, I. and Wong, C. (1998).  $\delta$ -N iodoacetyl ornithine and  $\epsilon$ -N-iodoacetyl lysine as irreversible inhibitors directed toward the active site of ornithine decarboxylase. *An. Esc. nac. Cienc. biol. México*, 44: 71-80.

Rodríguez-Páez, L., Pérez, O. A., Baeza, I. and Wong, C. (1998). Gossypol inhibits LDH-C4 due to the presence of 4-isopropyl salicylaldehyde into its chemical structure. *An. Esc. nac. Cienc. biol. México*, 44: 99-115.

Aguilar, L., Ortega, G., Campos, B., Fonseca, R., Ibáñez, M., Wong, C., Farfán, N., Kaetzel, M., Dedman, J. R. and Baeza, I. (1999) Phospholipid membranes form specific nonbilayer molecular arrangements that are antigenic. *J. Biol. Chem.* 274: 25193-25196.

Baeza, I. and Ortega, J., Editors. 2000. Human Biochemistry "On Line". National Polytechnic Institute.

Baeza, I. Chapter 1. Cell composition. 2000. In: Human Biochemistry "On Line". National Polytechnic Institute. pp. 1-8.

Baeza, I., Chapter 6. Estructure and function of cell membranes. In: Human Biochemistry "On Line". National Polytechnic Institute pp. 40-48.

Baeza, I. and Wong, C., Chapter 12. Metabolic integration. In: Human Biochemistry "On Line". National Polytechnic Institute pp. 61-69.

Baeza, I., Aguilar, L., Ibáñez, M., and Wong, C. (2000) Biochemistry of nucleic acids. In: Molecular Biomedicine, Ed. by E. Orozco and P. Gariglio. National Polytechnic Institute. pp. 9-23.

Noguera, B., Rodríguez-Paez, L., Baeza, I. and Wong, C. (2001). Trypanocidal activity of 4-isopropyl salicylaldehyde and 4-isopropyl salicylic acid on *Trypanosoma cruzi*. *Rev. Lat-amer. Microbiol.* 43:1-6.

Zazueta, C., Ramírez, J., García, N. and Baeza, I. (2003). Cardiolipin regulates the activity of reconstituted mitochondrial calcium uniporter by modifying the structure of the liposome bilayer. *J. Membrane Biol.* 191: 113-122.

Rodríguez-Paez, L., Juárez-Sánchez, M., Antúnez-Solís, J., Baeza, I. and Wong, C. (2003).  $\alpha$ -Azarone inhibits HMG-CoA reductase, lowers serum LDL-cholesterol levels and reduces biliary in hypercholesterolemic rats. *Phytomedicine* (In press).

Elizondo, S., Chena, M. A., Rodríguez-Páez, L., Noguera, B., Baeza, I. and Wong, C.. (2002). Inhibition of *Trypanosoma cruzi*  $\alpha$ -hydroxyacid dehydrogenase-isozyme II by N-isopropyl oxamate and its effect on intact epimastigotes. *J. Enzyme Inhibition and Medicinal Chemistry* (In press).